From: Jackson, Amelia
To: Sy, William
Cc: Cocuzza, Phil; Clemetson, Michael
Subject: FW: Rolling knolls Data Gaps SAP and QAPP Conference call Pore water Follow-up
Date: Wednesday, October 29, 2014 11:12:48 AM

Bill-fyi since HWSS will likely get involved at some point. This is the same issue that you and Katie Mishkin emailed about on 10/21/14.

Amelia Jackson, Lead Chemist
USEPA -Region 2
DESA-HWSB-SST
2890 Woodbridge Ave
Edison, NJ
tel: 732-906-6164

From: Clemetson, Michael
Sent: Wednesday, October 29, 2014 10:53 AM
To: Mitchell, Tanya
Cc: Jackson, Amelia; Pensak, Mindy
Subject: RE: Rolling knolls Data Gaps SAP and QAPP Conference call Pore water Follow-up

Tanya

Since they are having trouble with finding applicable methods and there are a limited number of samples they may want to consider centrifugation in the lab.

Mike

From: Mitchell, Tanya
Sent: Wednesday, October 29, 2014 6:47 AM
To: Clemetson, Michael
Subject: FW: Rolling knolls Data Gaps SAP and QAPP Conference call Pore water Follow-up

Hi Mike,

I received the following email from ARCADIS. Although we have provided the additional information on the collection methods it appears that they have concern with SOPs. Can you give me a call this morning to discuss?

Thanks,

Tanya

From: Walls (Young), Suzy [mailto:Suzy.Walls@arcadis-us.com]
Sent: Tuesday, October 28, 2014 5:40 PM
To: Mitchell, Tanya
Cc: Persico, John; Gutherz, Andrew
Subject: RE: Rolling knolls Data Gaps SAP and QAPP Conference call Pore water Follow-up

Tanya,

Following our discussion on October 15, 2014, ARCADIS reviewed the NJDEP guidance for porewater collections for approved sampling methods that could be used for SVOCs, PCBs, pesticides, and PAHs. Unfortunately, we have been unable to find any standard operating procedures for any methods that we can implement in the field.

We have also reviewed the information you provided below and did not find any approved protocols or standard operating procedures for collection methods that can be used for analytes other than VOCs and metals. The second to last link in your email provided the closest document to a field-ready protocol (Passive PE Sampling in Support of In Situ Remediation of Contaminated Sediments: SOP for PE Analysis); however, in reviewing this protocol, the typical extract volumes in sediment are 1-10mL. The lab has indicated that a minimum of 1 L of water would be necessary for PCB/pesticide analysis. Furthermore, this method does not appear to be approved by EPA at this time.

We would like to propose keeping the previously suggested porewater sampling methods (permeable diffusion bags) for VOCs and metals. We will continue to look for alternative sampling methods and procedures and would be willing to talk to you further about the sampling methods you suggested below. If we find an approved field procedure, we can submit an addendum to the SAP and QAPP with a detailed discussion of those methods.

Please let me know if you would like to discuss this issue further.

Thanks,

Suzy

From: Mitchell, Tanya [mailto:Mitchell.Tanya@epa.gov]
Sent: Monday, October 27, 2014 2:14 PM
To: Walls (Young), Suzy
Subject: Rolling knolls Data Gaps SAP and QAPP Conference call Pore water Follow-up

Hi Suzy,

During the call on October 15, EPA agreed to provide additional information on pore water sampling for analyses other than VOA. Please review the following information for incorporation into the SAP.

Should you have any questions or concerns regarding this email, please feel free to give me a call.

Regards,

Tanya

According to the QAPP submitted the ARCADIS plan to use permeable diffusion bags (PDB) which are designed to target VOCs only. However, there are other commercially available equipment more suited to analyze other contaminants in sediment pore water.

Some random examples of the passive sediment sampling equipment are listed below:

Rigid Porous Polyethylene (RPP) - VOCs, SVOCs, metals

Polyoxymethylene (POM) – PAHs, PCBs

Peepers - VOCs, SVOCs, PAHs, PCBs,

- Peepers are passive permeable membrane bags affixed to a substrate that are buried in the sediment. The peepers are left in the sediment for 2 to 3 weeks, extracted, and samples collected from the membrane using a syringe. Peepers are good for VOCs and metals, but not for hydrophobic organic compounds.

Solid Phase Microextraction (SPME) – PAHs, PCBs

- SPMEs are polyethylene fibers that are buried in the sediment and left for about 2 weeks. Hydrophobic compounds like PCBs, dioxins, and high MW PAHs reach equilibrium with the fibers. The fibers are retrieved and sent to a lab for analysis.

The NJDEP sediment guidance (http://www.nj.gov/dep/srp/guidance/srra/ecological_evaluation.pdf) recommends PE and POM for PAHs and PCBs

Excerpt from NJDEP Guidance: Polyethylene (PE) and polyoxymethylene (POM) samplers: These samplers are similar to SPMEs in their ability to sorb organic compounds from sediments. A principal advantage of using these samplers is their ability to come into equilibrium faster than SPMEs. Recent work has shown that uptake of PAH and PCBs by PE and POM samplers correlate with benthic organism uptake (Tomasaewski and Luthy, 2008).

Guidance on passive samplers
http://www.epa.gov/superfund/health/conmedia/sediment/pdfs/Passive_Sampler_SAMS_Final_Camera_Ready_-_Jan_2013.pdf

Useful article discussing passive samplers and membrane capabilities.
http://www.sciencedirect.com/science/article/pii/S0165993611001695#b0135

Table 1 of this document lists the various passive sampling devices and the capabilities.
http://www.jlakes.org/web/passive-sampling-techniques-water-TAC2005.pdf

Draft pore water sampling and analysis plan for a PCBs site in Reg 10.
http://www.epa.gov/region10/pdf/ph/11E/draft_rm11e_porewater_sap_03032014.pdf

Example of an SOP for use of passive PE sampling.
http://serdp.org/Program-Areas/Environmental-Restoration/Contaminated-Sediments/ER-200915/ER-200195-GD/(modified)/06Feb2013

Example of a polyethylene device for measuring PCBs in pore water.
http://pubs.acs.org/doi/pdf/10.1021/es800582a